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| EXAMINER | |
|---|---|
| HAILE, FEBEN | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. 10/624,521 | Applicant(s) HA ET AL. | |
|---|---|---|---|
| | Examiner FEBEN HAILE | Art Unit 2616 | |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --***

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _July 23, 2003_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-30_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-13,20-27 and 30_ is/are rejected.

7)☒ Claim(s) _15-19,28 and 29_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _23 July 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _7/23/2003_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

**1.** Claims 1-10 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (figure 1 and pages7-9), hereinafter referred to as AAPA, and Kohzuki et al. (US 6,657,964), hereinafter referred to as Kohzuki.

**Regarding claim 1**, AAPA disclose an egress subscriber terminal that repeatedly monitors traffic state of cells output from a switch terminal **(figure 1 unit 300A; egress subscriber terminal measures cell traffic output from an ATM switch)**, generates UBR bandwidth information corresponding thereto **(unit 306A and page 9 paragraph 0032; a traffic state determination unit determines UBR bandwidth based upon traffic state signals and traffic load signals)**, and feeds-back the UBR bandwidth information **(unit 301A and page 8 paragraph 29; a control cell generation unit loads the UBR bandwidth output from the state determination unit and outputs it to an ingress subscriber terminal)**; and an ingress subscriber terminal that outputs UBR cells to the switch terminal according to the fed-back UBR bandwidth information **(unit 100A/103A and page 8 paragraph 0028; an ingress**

**subscriber terminal including a FIFO receives the control cells output from the control cell generation and outputs them to the ATM switch)**.

AAPA fails to explicitly suggest repeatedly monitors cell congestion state and generates UBR bandwidth information corresponding thereto.

Kohzuki teaches repeatedly monitors cell congestion state **(figure 19 and column 13 lines 23-24; congestion information recognition)** and generates UBR bandwidth information corresponding thereto **(figure 10 and column 13 lines 25-29; bandwidth calculation)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the bandwidth control method taught by Kohzuki into the UBR Traffic control apparatus disclosed by AAPA. The motivation for such a modification is securing the transmission of cells to each connection in a bandwidth greater than minimum cell rate and allocating bandwidths to than minimum cell rate to respective connections at ratios corresponding to priorities of the respective connections.

**Regarding claim 2**, AAPA disclose a load measuring unit that measures traffic load of the relevant cell and outputs corresponding traffic load information **(figure 1 unit 305A; load measuring unit)**; an egress buffer unit that checks whether a prescribed buffer threshold value of the relevant cell has been exceeded and outputs corresponding traffic state information **(unit 303A; egress buffer unit)**; and a traffic state determination unit that determines UBR bandwidth based upon the traffic state information and the traffic load information **(306A; traffic state determination unit)** and

feeds-back the UBR bandwidth information to the ingress subscriber terminal **(page 8 paragraph 29; a control cell generation unit loads the UBR bandwidth output from the state determination unit and outputs it to an ingress subscriber terminal)**.

Kohzuki teaches a congestion information extraction unit that extracts congestion information indicating whether there is cell congestion in a relevant cell **(figure 19 and column 13 lines 23-24; congestion information recognition)** and a traffic state determination unit that determines UBR bandwidth based upon the congestion information **(figure 10 and column 13 lines 25-29; bandwidth calculation)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the bandwidth control method taught by Kohzuki into the UBR Traffic control apparatus disclosed by AAPA. The motivation for such a modification is securing the transmission of cells to each connection in a bandwidth greater than minimum cell rate and allocating bandwidths to than minimum cell rate to respective connections at ratios corresponding to priorities of the respective connections.

**Regarding claim 3**, AAPA as modified by Kohzuki explicitly disclose the claimed invention except for wherein the congestion information extraction unit extracts the congestion information by monitoring a congestion indicator field value of the relevant cell. However, the Examiner takes Official Notice of the use of a congestion indicator for the suggestion that a congestion condition is detected.

**Regarding claim 4**, AAPA discloses wherein the traffic state determination unit reduces the UBR bandwidth to UBR available bandwidth when the traffic state

information indicates that the prescribed buffer threshold value of the relevant cell has been exceeded **(pages 8-9 paragraphs 0030 &0032; based upon whether the volume of UBR cells stored in a buffer exceed a threshold value, the traffic state determination unit determines UBR bandwidth)**.

Kohzuki teaches wherein the traffic state determination unit reduces the UBR bandwidth to UBR available bandwidth when the congestion information indicates that there is corresponding cell congestion **(column 2 lines 39-53; decreasing bandwidth when determining that there is congestion)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the bandwidth control method taught by Kohzuki into the UBR Traffic control apparatus disclosed by AAPA. The motivation for such a modification is securing the transmission of cells to each connection in a bandwidth greater than minimum cell rate and allocating bandwidths to than minimum cell rate to respective connections at ratios corresponding to priorities of the respective connections.

**Regarding claim 5**, AAPA discloses increases UBR bandwidth when the traffic state information indicates that the prescribed buffer threshold value has not been exceeded **(pages 8-9 paragraphs 0030 &0032; based upon whether the volume of UBR cells stored in a buffer exceed a threshold value, the traffic state determination unit determines UBR bandwidth)**.

Kohzuki teaches increases UBR bandwidth by a first prescribed rate according to the traffic load confirmed through the traffic load information **(figure 22 and column 13**

**lines 55-60; minimum connection rate for a allocated bandwidth is assured)**, confirmed through the traffic load information when the congestion information indicates there is corresponding cell congestion **(column 2 lines 58-62; even when congestion is determined it is unnecessary to reduce bandwidth)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the bandwidth control method taught by Kohzuki into the UBR Traffic control apparatus disclosed by AAPA. The motivation for such a modification is securing the transmission of cells to each connection in a bandwidth greater than minimum cell rate and allocating bandwidths to than minimum cell rate to respective connections at ratios corresponding to priorities of the respective connections.

**Regarding claim 6**, Kohzuki discloses increases UBR bandwidth by the first prescribed rate according to the traffic load confirmed through the traffic load information **(figure 22 and column 13 lines 55-60; minimum connection rate for a allocated bandwidth is assured)**, confirmed through the traffic load information when the congestion information indicates there is corresponding cell congestion **(column 2 lines 39-53; increasing bandwidth when determining that there is no congestion)**.

**Regarding claim 7**, Kohzuki discloses wherein the traffic state determination unit increases the UBR bandwidth by applying said first prescribed rate when the traffic load is not greater than a prescribed lower load value **(column 2 lines 39-53; increasing bandwidth when determining that there is no congestion)**.

**Regarding claim 8**, Kohzuki discloses wherein the traffic state determination unit increases the UBR bandwidth by applying said second prescribed rate **(figure 22 and column 13 lines 55-60; minimum connection rate for a allocated bandwidth is assured)** when the traffic load is greater than a prescribed lower load value and is not greater than a prescribed upper load value **(column 2 lines 39-62; increasing bandwidth when determining that there is no congestion)**.

**Regarding claim 9**, Kohzuki discloses wherein the traffic state determination unit maintains the UBR bandwidth when the traffic load exceeds a prescribed upper load value **(column 1 line 66-column 2 line 10; determining whether an incoming cell interval falls within a prescribed allowable value, wherein when the incoming cells are received in a bandwidth higher than the sending bandwidth, these cells can be transmitted maintaining the contracted shaping bandwidth)**.

**Regarding claim 10**, AAPA disclose an egress subscriber terminal that determines UBR bandwidth periodically according to traffic state of cells output from a switch terminal **(figure 1 unit 300A; egress subscriber terminal measures cell traffic output from an ATM switch)**, wherein the egress terminal determines subscriber boards that are to be controlled when the UBR bandwidth changes based upon cell count information for each subscriber board of the subscriber boards **(pages 8-9 paragraphs 0030 &0032; based upon whether the volume of UBR cells stored in a buffer exceed a threshold value, the traffic state determination unit determines UBR bandwidth)** and feeds-back the UBR bandwidth information to the determined subscriber boards to be controlled **(page 8 paragraph 29; a control cell generation**

**unit loads the UBR bandwidth output from the state determination unit and outputs it to an ingress subscriber terminal)**; and an ingress subscriber terminal that outputs UBR cells to the switch terminal according to the fed-back UBR bandwidth information **(unit 100A/103A and page 8 paragraph 0028; an ingress subscriber terminal including a FIFO receives the control cells output from the control cell generation and outputs them to an ATM switch)**.

AAPA fails to explicitly suggest determines UBR bandwidth periodically according to cell congestion experience.

Kohzuki teaches determines UBR bandwidth periodically according to cell congestion experience **(column 13 lines 23-29; congestion information recognition and bandwidth calculation)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the bandwidth control method taught by Kohzuki into the UBR Traffic control apparatus disclosed by AAPA. The motivation for such a modification is securing the transmission of cells to each connection in a bandwidth greater than minimum cell rate and allocating bandwidths to than minimum cell rate to respective connections at ratios corresponding to priorities of the respective connections.

**Regarding claim 20**, AAPA disclose repeatedly determining, at an egress subscriber terminal **(figure 1 unit 300A; an egress subscriber terminal measures cell traffic output from an ATM switch)**, UBR bandwidth according traffic state of cells output from a switch terminal **(page 9 paragraph 0032; a traffic state determination**

**unit determines UBR bandwidth based upon a traffic state signal and traffic load signal)** and feeding-back the determined UBR bandwidth **(page 8 paragraph 29; a control cell generation unit loads the UBR bandwidth output from the state determination unit and outputs it to an ingress subscriber terminal)**; and outputting, at an ingress subscriber terminal **(figure 1 unit 100A; an ingress subscriber terminal determines the UBR traffic amount according to the UBR bandwidth information included in the control cell)**, UBR cells to the switch terminal according to the fed-back UBR bandwidth information **(page 8 paragraph 0028; a FIFO receives the control cells and outputs them to the ATM switch)**.

AAPA fails to explicitly suggest repeatedly determining, at an egress subscriber terminal, UBR bandwidth according to cell congestion experience.

Kohzuki teaches determining UBR bandwidth according to cell congestion experience **(column 13 lines 23-29; congestion information recognition and bandwidth calculation)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the bandwidth control method taught by Kohzuki into the UBR Traffic control apparatus disclosed by AAPA. The motivation for such a modification is securing the transmission of cells to each connection in a bandwidth greater than minimum cell rate and allocating bandwidths to than minimum cell rate to respective connections at ratios corresponding to priorities of the respective connections.

**Regarding claim 21**, AAPA as modified by Kohzuki explicitly disclose the claimed invention except for wherein the cell congestion state is confirmed through the value set in a congestion indicator field of the cell according to the occurrence of cell traffic congestion at the switch terminal. However, the Examiner takes Official Notice of the use of a congestion indicator for the suggestion that a congestion condition is detected.

**Regarding claim 22**, AAPA discloses confirming whether a pre-determined buffer threshold value of the cell has been exceeded **(the egress buffer unit outputs traffic state signals based upon whether a volume of UBR cells stored exceeds a threshold value)**; decreasing the UBR bandwidth to UBR available bandwidth when the buffer threshold value has been exceeded **(the traffic state determination unit determines UBR bandwidth based upon the traffic state signal)**.

Kohzuki teaches confirming whether there is traffic congestion experience in a cell **(figure 19; congestion information recognition block)**; decreasing the UBR bandwidth to UBR available bandwidth when there has been traffic congestion **(column 2 lines 39-53; decreasing bandwidth when determining that there is congestion)**; and increasing the UBR bandwidth according to the traffic load of the cell when there has been no traffic congestion in the cell **(column 2 lines 39-53; increasing bandwidth when determining that there is no congestion)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the bandwidth control method taught by Kohzuki into the UBR Traffic control apparatus disclosed by AAPA. The motivation for such a

modification is securing the transmission of cells to each connection in a bandwidth greater than minimum cell rate and allocating bandwidths to than minimum cell rate to respective connections at ratios corresponding to priorities of the respective connections.

**Regarding claim 23**, Kohzuki discloses confirming the traffic load of the cell **(figure 19; congestion information recognition block)**; increasing the UBR bandwidth by applying first prescribed rate that is a certain specific bandwidth increase rate **(figure 22 and column 13 lines 55-60; minimum connection rate for a allocated bandwidth is assured)** when the traffic load is not greater than the pre-determined minimum load value **(column 2 lines 39-53; increasing bandwidth when determining that there is no congestion)**; and increasing the UBR bandwidth by applying a second prescribed rate that is smaller than said first prescribed rate **(figure 22 and column 13 lines 55-60; minimum connection rate for a allocated bandwidth is assured)** when the traffic load is greater than the minimum load value and is not greater than the pre-determined maximum load value **(column 2 lines 58-62; even when congestion is determined it is unnecessary to reduce bandwidth)**.

**Regarding claim 24**, Kohzuki discloses maintaining of the current UBR bandwidth when the traffic load exceeds said maximum load value **(column 1 line 66-column 2 line 10; determining whether an incoming cell interval falls within a prescribed allowable value, wherein when the incoming cells are received in a bandwidth higher than the sending bandwidth, these cells can be transmitted maintaining the contracted shaping bandwidth)**.

**2.** Claims 11-14, 25-27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (figure 1 and pages7-9), hereinafter referred to as AAPA, and Kohzuki et al. (US 6,657,964), hereinafter referred to as Kohzuki, in view of Reynolds (US 6791,943), hereinafter referred to as Reynolds.

**Regarding claim 11**, AAPA discloses a load measuring unit that measures traffic load of the relevant cell and outputs corresponding traffic load information **(figure 1 unit 305A; a load measuring unit measures traffic load)**; a user cell extraction unit that counts user cells for said each subscriber board and outputs the cell count information for each relevant subscriber board **(unit 304A; a user cell extraction unit extracts user cells out of the user cells and control cells output from the ATM switch)**; an egress buffer unit that checks whether UBR user cells of said user cells exceed a pre-determined buffer threshold value and outputs corresponding traffic state information **(unit 303A; an egress buffer unit outputs traffic state signals based upon whether a volume of UBR cells stored exceeds a threshold value)**; a traffic state determination unit that increases, decreases or maintains the UBR bandwidth based upon the traffic state information and the traffic load information, and wherein when the UBR bandwidth is increased or decreased **(page 9 paragraph 0032; a traffic state determination unit determines UBR bandwidth based upon the traffic state signal and a traffic load signal)** the traffic state determination unit outputs the increased or decreased UBR bandwidth information and information on the subscriber boards to be controlled **(unit 301A; the traffic state determination unit outputs the determined UBR bandwidth information to a control cell generation unit)**; and a control cell

generation unit that generates control cells using the UBR bandwidth information and the information on subscriber boards to be controlled and feeds-back the determined UBR bandwidth information to the ingress subscriber terminals of the subscriber boards to be controlled through the generated control cells **(page 8 paragraph 29; the control cell generation unit loads the UBR bandwidth output from the state determination unit and outputs it to an ingress subscriber terminal).**

AAPA fails to explicitly suggest a congestion information extraction unit that extracts congestion information indicating whether there is cell congestion experience in a relevant cell; a traffic state determination unit that increases, decreases or maintains the UBR bandwidth based upon the congestion information; and the traffic state determination unit determines subscriber boards that are to be controlled by using the user cell count information for said each subscriber board.

Kohzuki teaches a congestion information extraction unit that extracts congestion information indicating whether there is cell congestion experience in a relevant cell **(figure 19 and column 13 lines 23-24; congestion information recognition)**; a traffic state determination unit that increases, decreases or maintains the UBR bandwidth based upon the congestion information **(figure 10 and column 13 lines 25-29; bandwidth calculation)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the bandwidth control method taught by Kohzuki into the UBR Traffic control apparatus disclosed by AAPA. The motivation for such a modification is securing the transmission of cells to each connection in a bandwidth

greater than minimum cell rate and allocating bandwidths to than minimum cell rate to respective connections at ratios corresponding to priorities of the respective connections.

AAPA, Kohzuki, and/or their combination fail to explicitly suggest determines subscriber boards that are to be controlled by using the user cell count information for said each subscriber board.

Reynolds teaches determines subscriber boards that are to be controlled by using the user cell count information for said each subscriber board **(figure 4; cell bandwidth determinator including a user cell counter)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate method of determining cell bandwidth taught by Reynolds into the UBR Traffic control apparatus disclosed by AAPA as modified by the bandwidth control method taught by Kohzuki. The motivation for such a modification is a system capable of making measurements to efficiently obtain bandwidth information.

**Regarding claim 12**, AAPA as modified by Kohzuki explicitly disclose the claimed invention except for wherein the congestion information extraction unit extracts the congestion information by monitoring a congestion indicator field value of the relevant cell. However, the Examiner takes Official Notice of the use of a congestion indicator for the suggestion that a congestion condition is detected.

**Regarding claim 13**, Reynolds discloses wherein the user cell extraction unit periodically extracts user cells **(figure 4)**, counts cells for each subscriber board by using source information included in the extracted cells **(unit 404; user cell counter)**,

and wherein the user cell extraction unit outputs the cell count information for said each subscriber board to the traffic state determination unit when a current period ends **(unit 406; rate calculator)**.

**Regarding claim 14**, AAPA discloses reduces the UBR bandwidth to UBR available bandwidth when the traffic state information indicates that the pre-determined buffer threshold value has been exceeded **(the egress buffer unit outputs traffic state signals based upon whether a volume of UBR cells stored exceeds a threshold value and the traffic state determination unit determines UBR bandwidth based upon the traffic state signal).**

Kohzuki teaches reduces the UBR bandwidth to UBR available bandwidth when the congestion information indicates that there has been congestion **(column 2 lines 39-53; decreasing bandwidth when determining that there is congestion)**.

Reynolds teaches determines the subscriber board having a cell count value above a prescribed level as the subscriber board to be controlled **(figure 4; user cell counter and rate calculator)**.

**Regarding claim 25**, AAPA disclose periodically counting, at an egress subscriber terminal **(figure 1 unit 300A; an egress subscriber terminal)**, cells output from a switch terminal for each transmitting subscriber board **(the egress subscriber terminal measures cell traffic output from an ATM switch)**; determining UBR bandwidth according traffic state of said cells **(unit 306A; a traffic state determination unit)**; feeding back said increased or decreased UBR bandwidth information to said subscriber boards to be controlled **(page 8 paragraph 29; a control cell generation**

**unit loads the UBR bandwidth output from the state determination unit and outputs it to an ingress subscriber terminal)**; and outputting, at an ingress subscriber terminal of at least one of said subscriber boards to be controlled **(figure 1 unit 100A; an ingress subscriber terminal determines the UBR traffic amount according to the UBR bandwidth information included in the control cell)**, UBR cells to the switch terminal according to the fed-back UBR bandwidth information **(page 8 paragraph 0028; a FIFO receives the control cells and outputs them to the ATM switch)**.

AAPA fails to explicitly suggest determining UBR bandwidth according to congestion experience at the switch terminal.

Kohzuki teaches determining UBR bandwidth according to congestion experience at the switch terminal **(column 13 lines 23-29; congestion information recognition block and bandwidth calculation).**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the bandwidth control method taught by Kohzuki into the UBR Traffic control apparatus disclosed by AAPA. The motivation for such a modification is securing the transmission of cells to each connection in a bandwidth greater than minimum cell rate and allocating bandwidths to than minimum cell rate to respective connections at ratios corresponding to priorities of the respective connections.

AAPA, Kohzuki, and/or their combination fail to explicitly determining subscriber boards to be controlled by using the cell count information for each subscriber board.

Reynolds teaches determining subscriber boards to be controlled by using the cell count information for each subscriber board **(figure 4; cell bandwidth determinator including a user cell counter)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate method of determining cell bandwidth taught by Reynolds into the UBR Traffic control apparatus disclosed by AAPA as modified by the bandwidth control method taught by Kohzuki. The motivation for such a modification is a system capable of making measurements to efficiently obtain bandwidth information.

**Regarding claim 26**, Reynolds discloses periodically extracting user cells from said cells output from the switch terminal and confirming source information of the relevant cells **(figure 4)**; counting said user cells for each transmitting subscriber board by using said source information for a relevant period **(unit 404; user cell counter)**; and initializing said count value for each subscriber board when the relevant period ends **(unit 406; rate calculator).**

**Regarding claim 27**, AAPA discloses confirming whether a pre-determined buffer threshold value of the cell has been exceeded **(the egress buffer unit outputs traffic state signals based upon whether a volume of UBR cells stored exceeds a threshold value)**; decreasing the UBR bandwidth to UBR available bandwidth when the buffer threshold value has been exceeded **(the traffic state determination unit determines UBR bandwidth based upon the traffic state signal)**.

Kohzuki teaches confirming whether there is traffic congestion experience in a cell **(figure 19 and column 13 lines 23-24; congestion information recognition)**;

decreasing the UBR bandwidth to UBR available bandwidth when there has been traffic congestion **(column 2 lines 39-53; decreasing bandwidth when determining that there is congestion)**; and increasing the UBR bandwidth according to the traffic load of the cell when there has been no traffic congestion in the cell **(column 2 lines 39-53; increasing bandwidth when determining that there is no congestion)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the bandwidth control method taught by Kohzuki into the UBR Traffic control apparatus disclosed by AAPA. The motivation for such a modification is securing the transmission of cells to each connection in a bandwidth greater than minimum cell rate and allocating bandwidths to than minimum cell rate to respective connections at ratios corresponding to priorities of the respective connections.

**Regarding claim 30**, AAPA disclose generating control cells to be sent to said subscriber boards to be controlled **(unit 301A; the traffic state determination unit outputs the determined UBR bandwidth information to a control cell generation unit)** and setting said UBR bandwidth information in the control cells and feeding them back to the ingress subscriber terminals of said subscriber boards to be controlled **(page 8 paragraph 29; the control cell generation unit loads the UBR bandwidth output from the state determination unit and outputs it to an ingress subscriber terminal)**.

### *Allowable Subject Matter*

**3.** Claims 15-19 and 28-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Conclusion*

**4.** The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

**a)** Mukai et al. (US 7,209,443), Bandwidth Updating Method and Bandwidth Updating Apparatus

**b)** Kawarai et al. (US 6,687,225), Bandwidth Control Apparatus

**c)** Soumiya et al. (US 5,940,375), Feedback Control Apparatus and Cell Scheduling Apparatus for use with Cell Exchange

**5.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to FEBEN HAILE whose telephone number is (571)272-3072. The examiner can normally be reached on 10:00 am-6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2616

FEBEN HAILE
Examiner
Art Unit 2616